

Amendments to the Claims

1. (Original) A three-dimensional structure element comprising:
a substrate; and
three-dimensional structures arranged in a predetermined effective area on the substrate,
wherein
the three-dimensional structures have space portions which are formed by removing a
sacrificial layer, between the three-dimensional structures and the substrate, and
on the substrate, a dummy area is arranged to surround the effective area, dummy
structures are arranged in the dummy area, and the dummy structures have space portions, which
are formed by removing a sacrificial layer, between the dummy structures and the substrate.
2. (Original) A three-dimensional structure element according to claim 1, wherein a
portion of the dummy structures opposed to the substrate is formed in a same shape as the three-
dimensional structures.
3. (Original) A three-dimensional structure element according to claim 1, wherein the
dummy structures have columns for fixing at least one section thereof to the substrate.
4. (Original) A three-dimensional structure element according to claim 1, wherein the
dummy structures have a thin film covering the dummy area and plural columns arranged
between the thin film and the substrate.
5. (Original) An optical switch comprising:
an optical waveguide substrate; and
a three-dimensional element substrate including displaceable reflecting mirrors, wherein
the three-dimensional structure element substrate has a substrate and three-dimensional
structures arranged in a predetermined effective area on the substrate,
the three-dimensional structures include the reflecting mirrors and displacement portions
on which the reflecting mirrors are placed, and the displacement portions have space portions,

which are formed by removing a sacrificial layer, between the displacement portions and the substrate, and

on the substrate, a dummy area is provided to surround the effective area, dummy structures are arranged in the dummy area, and the dummy structures have space portions, which are formed by removing a sacrificial layer, between the dummy structures and the substrate.

6. (Original) A micro device comprising displaceable thin film three-dimensional structures, wherein

the micro device has a substrate and the thin film three-dimensional structures arranged in a predetermined effective area on the substrate,

the thin film three-dimensional structures have space portions, which are formed by removing a sacrificial layer, between the thin film three-dimensional structures and the substrate, and

on the substrate a dummy area is arranged to surround the effective area, dummy structures made of a thin film are arranged in the dummy area, and the dummy structures have space portions, which are formed by removing a sacrificial layer, between the dummy structures and the substrate.

7. (Original) A method of manufacturing a three-dimensional structure element comprising:

a step of forming a sacrificial layer and predetermined thin film three-dimensional structures in a predetermined effective area on a substrate and forming a sacrificial layer and predetermined thin film dummy structures in a dummy area surrounding the effective area; and

a step of removing the sacrificial layers in the effective area and the dummy area with a dry process.

8. (Original) A three-dimensional structure element according to claim 1, wherein:
each of the three-dimensional structures in the effective area comprises a respective portion of a wiring pattern layer associated therewith, the respective portions of the wiring pattern layer being configured to operate the respective three-dimensional structures in the effective area; and

the dummy structures are not associated with the wiring pattern layer.

9. (Original) A three-dimensional structure element according to claim 1, wherein each of the three-dimensional structures in the effective area and each of the dummy structures comprises a respective displacement portion.

10. (Original) A three-dimensional structure element according to claim 9, wherein:
each of the displacement portions comprises at least one respective leg coupled to the substrate; and

each of the displacement portions extends in a cantilever manner from the at least one leg.

11. (Original) A three-dimensional structure element according to claim 10, wherein each of the displacement portions in the effective area comprises a respective reflecting mirror situated at an end of the displacement portion.

12. (Original) A three-dimensional structure element according to claim 11, wherein each of the displacement portions in the effective area further comprises a respective portion of a wiring pattern layer situated on the substrate below the respective reflecting mirror.

13. (Original) A three-dimensional structure element according to claim 10, wherein:
each of the displacement portions comprises two legs coupled to the substrate; and
each of the displacement portions extends in a cantilever manner from the respective legs.

14. (New) A three-dimensional structure element according to claim 1, wherein:
the substrate comprises an ineffective area arranged around the circumference of the substrate;

on the substrate, the dummy area is arranged to surround the effective area, but only adjacent the ineffective area.